Amlyn A506 & 5850

The Amlyn 5 in 1 Alternative

Introducing the 5 in 1 Amlyn Alternative

Flexible, eight megabyte capacity Amlyn's unique cartridge minifloppy disk drives provide up to 8MB of data storage for both on-line floppy disk drive applications and dynamic Winchester backup.

The Amlyn MiniPac cartridge allows OEMs and system houses to effectively package five drives in one with all the attendant flexibility and improved reliability advantages. Each single-sided diskette has the same storage capacity as both sides of double density 8 in. floppy disks and 60% more than conventional double-sided, double-density 5¼ in. floppy disks.

The five diskette cartridge is designed for convenient hand loading and also permits changing of diskettes independently of one another within the cartridge.

Dynamic Backup Now, backup for Winchesters can be both insurance and assurance. Insurance that your data is safely backed up—and assurance that if your sealed media disk drive fails, your system can still operate, unlike when using streaming tape devices for backup. For instance, the Amlyn Model A506 diskette surfaces match each of the four ST506 surfaces with 153 data tracks, plus one alternate track. The fifth diskette provides an additional 25% more storage capacity, which may be used for operating system load, or other requirements. Should the Winchester drive fail, the Amlyn backup is designed to duplicate its operation, though at a slower data transfer rate due to disk rotational speed differences.

Physical and interface compatibility The Amlyn minifloppy drives conform to the same form factor as standard minifloppy disk drives. Amlyn's Model 5850 is designed as a functional alternative to the Maxi-Drive, appearing to your controller and software as five SA850 drives.

The Amlyn Model A506 is physically and interface compatible with the Seagate Technology ST506, or equivalent 5¼ Winchester disk drives.

Format Compatibility All Amlyn minifloppy drives can read existing minifloppy diskettes to enable data base conversions to be conveniently made from a standard to an Amlyn diskette.

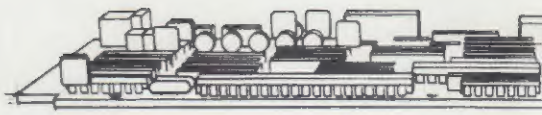
Globally Adapted Ship an Amlyn drive anywhere in the world and be confident that it will function without requiring touchy field alignment, irrespective of temperature or humidity. Amlyn's innovative microprocessor control provides automatic compensation for diskette expansion and contraction, so that every seek is exactly on track, the first time, every time.

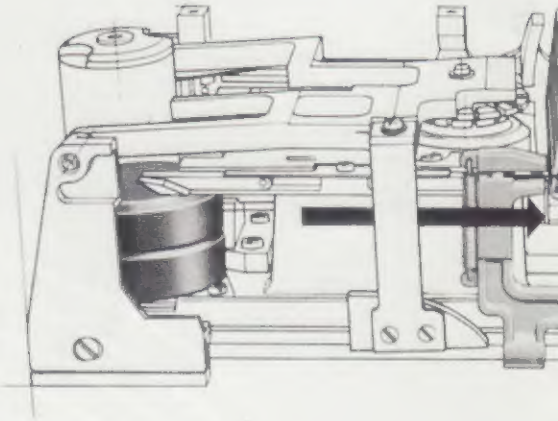
Five-to-one Reliability and Versatility Compacting the performance of five drives into one inherently increases your system's MTBF proportionately through component reduction. A big plus for OEMs.

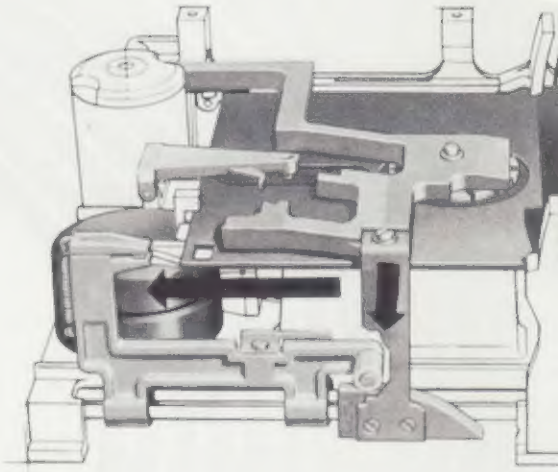
The Amlyn drives offer self-contained diagnostics which indicate whether the machine is operating properly.

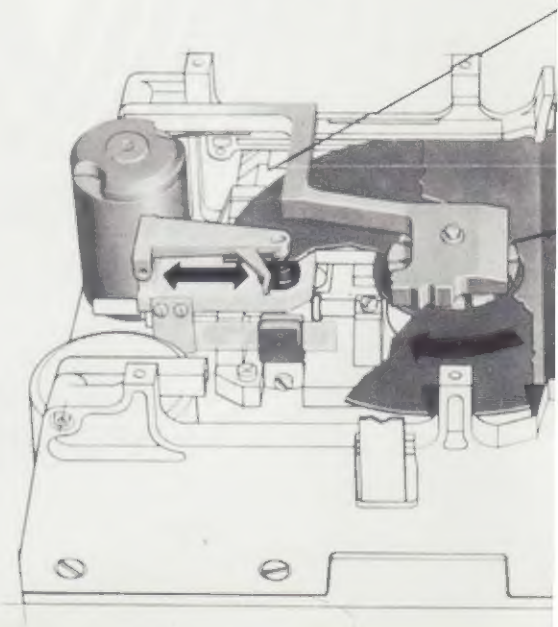
The drives are also energy efficient, since only one motor operates at any one time, which means less heat. All are low power, requiring only standard +5 and +12 volts DC at standard minifloppy current levels.

Moreover, the Amlyn five-in-one alternative affords OEMs the ability to configure a single drive system which may be expanded with add-on Winchester drives. The single drive system will perform edit, swap, store and other multiple drive functions without the cost, space or potential service problems of multiple drive systems.









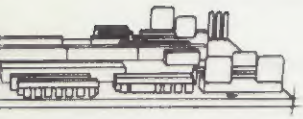


Figure 1

MiniPac Cartridge This unique Amlyn design holds five single-sided, 5¼ inch diskettes. Each diskette contains 154 tracks with a density of 170 TPI. Diskette selection is made by articulation of the MiniPac cartridge tray to present the selected diskette to the picker arm. The MiniPac cartridge may be easily loaded or removed while the drive is either on or off. The cartridge keeps diskettes safe and clean for ideal storage.

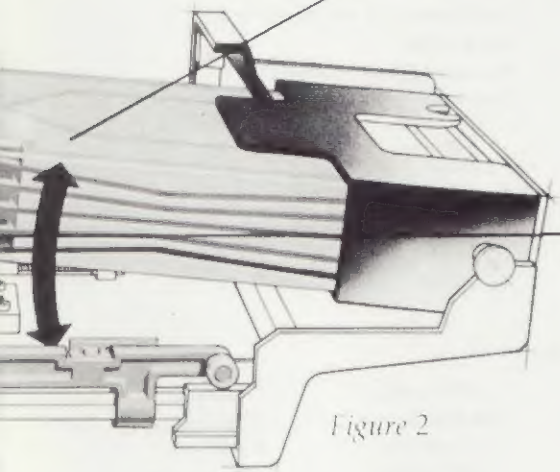


Figure 2

Diskette Picker The picker grasps the diskette which has been aligned in its path by the articulated cartridge tray. It automatically positions the diskette onto the spindle by a simple motion, releasing as the diskette is securely clamped. This assures accurate, repeatable diskette centering to minimize wear and handling damage. The drive senses inaccurate centering and reclamps the diskette automatically.

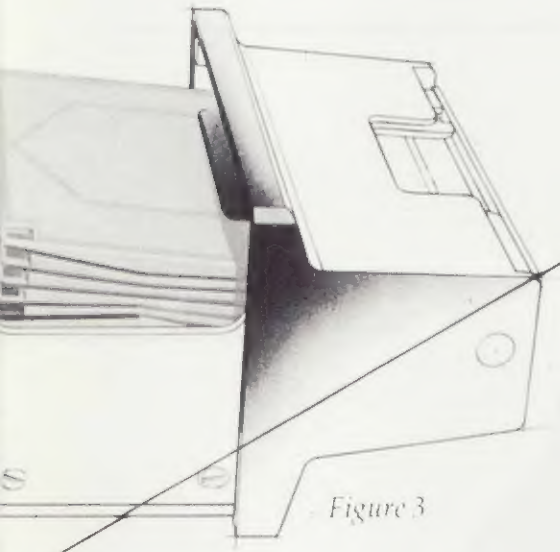


Figure 3

Microstep Control The Amlyn microprocessor controlled stepper motor offers ultrafine precision. Heads can be moved in increments as small as 59 micro inches. A servo loop referenced to a special optical scale enables the head carriage to always precisely locate and maintain its position. The microprocessor controlled seek profile allows speeds much faster than "blind" stepping techniques.

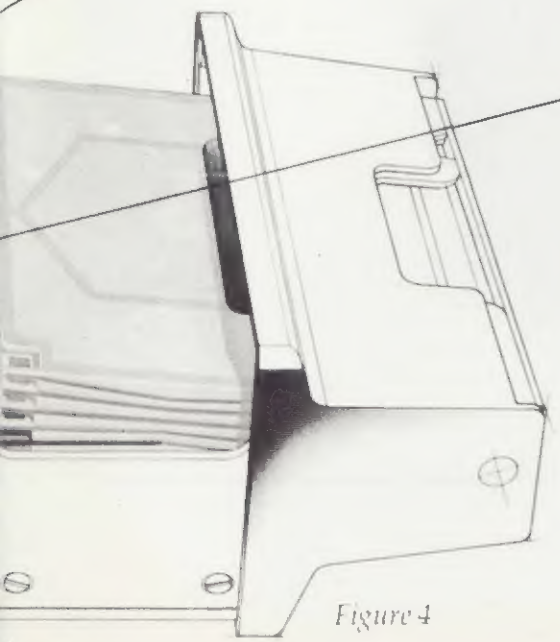


Figure 4

Automatic two speed spindle The DC motor offers two microprocessor controlled speeds which provide compatibility with media recorded at standard minifloppy densities as well as the higher Amlyn rates.

Figure 2 shows the Drive Control PCB and the picker mechanism as it is about to remove the selected diskette from the articulated MiniPac cartridge.

Figure 3 depicts the selected diskette being clamped to the spindle.

Figure 4 highlights the read/write head, the head load pad, the optical scale, and the scale sensor assembly.

Physical Specifications

Environment Limits (Operational)
Ambient Temperature = 40° to 104° F (4° to 40°C)
Relative Humidity = 20% to 80% Noncondensing
Maximum Wet Bulb = 78°F (25°C)

DC Power Requirements
+12 VDC ±5% @ 1.2 A typical
+ 5 VDC ±5% @ 0.9 A typical

Weight = 2.5 lbs. (1.2 kg)

Mounting Envelope Dimensions
Height = 3.25 inches (82.6 mm)
Width = 5.75 inches (146.0 mm)
Depth of 5850 = 7.88 inches (200.2 mm)
Depth of A506 = 8.11 inches (206.0 mm)

Heat Dissipation = 86 BTU/hr. typical (25 watts)

Media Requirements
5 each UHR I or equiv. Mini-Diskettes

Diskette Cartridge Requirements
1 each MiniPac cartridge

Functional Specifications

Rotational Speed = 360 rpm
Recording Density = 9500 bpi (inside track double density)
Flux Density = 9500 fci
Track Density = 170 tpi
Track Width = 3.5 mils
Cylinders = 154
Tracks = 770
Heads = 1
Encoding Method = FM, MFM, M^2FM

Performance Specifications

Transfer Rate = 500 kbits/sec

Average Rotational Latency = 83 ms

Access Time:
Adjacent Track to Track = 3 msec
Track 00 to Track 153 = 230 msec
Average Access Time = 85 msec
Settling Time = 15 msec
Diskette to Diskette = 1.9 sec average, 2.9 sec max.

Reliability Specifications

MTBF: 8000 POH under typical usage

MTR: 30 minutes

Component Life: 15,000 POH

Error Rates:
Soft Read Errors = 1 per 10^9 bits read
Hard Read Errors = 1 per 10^{12} bits read
Seek Errors = 1 per 10^6 seeks

Media Life:
Passes per Track = 3.5×10^6
Insertions = 30,000+

Capacity	Unformatted Double Density	IBM Format 256 Byte Sectors	Seagate ST506 Format
Per MiniPac cartridge	8 mbytes	5.1 mbytes	6.3 mbytes
Per Diskette	1600 kbytes	1025 kbytes	1253.4 kbytes
Per Track	10.4 kbytes	6656 bytes	8192 bytes

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